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## ABSTRACT

New York City's Early Grade Improvement Program (EGIP) was initiated in the 1985-86 school year as an effort to improve pupil achievement in the primary grades through a reduction of class size. Schools without sufficient space to reduce class size through creation of new classes were given EGIP funds to provide paraprofessional assistance to classroom teachers or to provide two teachers per class. This evaluation of EGIP for 1986-87 focuses on second grade students and consists of three parts. The first is a summary of district self-assessments of EGIP implementation. The second is a presentation of demographic profiles of the city-wide second-grade populations for 1985-86 and 1986-87. The third is a comparison of outcome data for the two academic years. Outcome data are of two kinds: descriptive data about second-grade classroom configurations and pupil achievement data. Achievement and class size data for each community school district are presented in appendices.  
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March, 1988

EARLY GRADE  
IMPROVEMENT PROGRAM  
1986-87

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## EARLY GRADE IMPROVEMENT PROJECT

1986-87

### ABSTRACT

Intended to facilitate pupil achievement in the early grades, the Early Grade Improvement Project provided funds for class size reduction - where space permitted - or the addition of paraprofessionals or additional teachers to existing classrooms. The report for 1986-87 presents demographic data for second grade and citywide data on reading and mathematics achievement. Also presented is citywide class size data for the second grade. Achievement and class size data for each community school district are presented in appendices.

## EARLY GRADE IMPROVEMENT PROGRAM, 1986-87

### INTRODUCTION

The Early Grade Improvement Program (EGIP) was first instituted in the 1985-86 academic year as an effort to improve pupil achievement in the early grades through reduction of class size in the first through third grades. In schools without sufficient space to reduce class size through creation of new classes, EGIP funds were used to provide paraprofessional assistance to classroom teachers or to provide two teachers per class.

Evaluation of EGIP for 1986-87, which focuses on second graders, consists of three parts. First is a summary of district self-assessments of EGIP implementation. Second is a presentation of demographic profiles of the city-wide second-grade populations for 1985-86 and 1986-87, for purposes of establishing parametric equivalence. Third is a comparison of outcome data for the two academic years. Outcome data are of two kinds: descriptive data about second-grade classroom configurations and pupil achievement data.

### DISTRICT SELF-ASSESSMENTS

Twenty-seven of the 32 community school districts submitted final reports on the EGIP in their districts. One district reported being unable to implement the class size reduction that was the central feature of the program because of severe overcrowding in the district's schools. The remaining 26 districts summarized pupil outcomes and improvements in their instructional

programs that resulted from EGIP. These districts also specified how they planned to use the evaluative results of the 1986-87 program to develop the 1987-88 EGIP.

Twenty-five of the responding districts noted improvements in students' cognitive achievement and academic skills as a result of participation in EGIP. This academic progress was noted most frequently in the areas of reading and mathematics; growth also was noted by some districts in the areas of language proficiency, motor skills, and science.

Thirteen districts noted an increase in students' social/interpersonal skills. Five reports stated that children were more motivated to attend school; 13 districts reported an increase in attendance. Five felt that the program had a positive effect on students' self-image and two noticed an increase in parental interest in and support of the schools.

All twenty-six reporting districts described changes made in instructional practices in EGIP classes. Most frequently, they reported more small-group instruction (in 17 districts) and more individualized instruction (in an overlapping but not identical set of 17 districts). Eight districts reported an emphasis on learning centers. Less frequently reported were: emphasis on language development and on thinking/reasoning skills, children's use of manipulatives in developing mathematics concepts, focus on the writing process, and improved classroom climate accompanied by increased adult-pupil interaction.



The districts described their use of evaluative results in developing the 1987-88 EGIP. Thirteen districts were specific in identifying staff development as the vehicle for change. The areas in which improvement was sought were varied: greater individualization through grouping, use of learning centers, and effective use of paraprofessionals; focus on the specific needs of special groups of students (i.e., special education, LEP students); development of instructional approaches such as the whole language approach, use of manipulatives, and direct instruction; ongoing assessment of individual children's needs; and more effective ways to work with parents.

## FINDINGS

### Demographic Data

Table 1 presents ethnic data for all second graders in the New York City public schools for 1985-86 and for 1986-87. Black and Hispanic pupils each constituted 37 percent of second graders in both 1985-86 and 1986-87. White pupils accounted for slightly

TABLE 1

### City-Wide Ethnic Distribution of Second-Grade Pupils

Ethnicity	1985-86		1986-87	
	N	PCT	N	PCT
American Indian	38	0.1%	35	0.0%
Asian	4118	5.8	4467	6.3
Black	26243	37.2	26273	36.9
Hispanic	26166	37.1	26471	37.3
White	13910	19.7	13807	19.4

over 19 percent and Asian pupils for six percent of the cohorts. There were no differences in the ethnic composition of the second grades being examined.

The proportion of second graders considered to have limited proficiency in English declined slightly from fall, 1985, to fall, 1986, from nearly fifteen percent to nearly thirteen percent. Attendance rates, presented in Table 3, were virtually constant at 89 percent for both years.

TABLE 2  
Limited English Proficient Second-Grade Pupils

1986		1987	
N LEP	PCT Register	N LEP	PCT Register
10502	14.9%	9182	12.9%

TABLE 3  
City-Wide Attendance for Second-Grade Pupils

1986		1987	
PCT	N	PCT	N
89.5	70475	89.2	70993

### Outcome Data

Data on classroom configurations for the second grade are presented in Table 4. (See Appendices A.1 to A.4 for a complete listing of class size by classroom configuration by community school district.) Average class sizes for each of the three classroom configurations was the same in 1985-86 as in 1986-87. One-teacher classes averaged just under 25 pupils while those classes with a paraprofessional or two teachers averaged just over thirty-one pupils.

TABLE 4  
Second-Grade Class Size, City-Wide

Classroom Configuration	1986			1987		
	Reg- ister	# Classes	Mean Class Size	Reg- ister	# Classes	Mean Class Size
All Classes	68367	2643	25.86	69259	2731	25.36
With Para- Professional	12555	401	31.30	9295	296	31.40
With Two Teachers	1409	45	31.31	1392	44	31.63
One Teacher	54403	2197	24.76	58542	2390	24.42

Reading achievement data are presented in Table 5. Second graders scored, on average, two normal curve equivalents (NCE) higher in spring, 1987, than had second graders the previous year, from 48 to 50. This indicates that, on average, second graders in the New York City public schools were, in spring of

1987, reading at grade level as compared to a national sample. When second-grade reading achievement is examined by quartiles, it is evident that there was a shift to the upper end of the distribution with the 1987 testing. A lower percentage of pupils scored in the first, or lowest, quartile and a higher percentage scored in the fourth, or highest, quartile. Mean second-grade reading and mathematics scores by community school district, for 1986 and 1987, are presented in Appendix B.

TABLE 5  
City-Wide Achievement for Second-Grade Pupils,  
Metropolitan Reading Test

1986		1987	
Mean NCE	Number Tested	Mean NCE	Number Tested
47.6	58936	49.7	58580

Quartile Analysis of Second-Grade Reading Achievement

Quartile	Percentage of Pupils Scoring in Quartile	
	1986	1987
1 (1st-25th Percentile)	31.6%	28.8%
2 (26th-50th Percentile)	19.2	19.0
3 (51th-75th Percentile)	19.9	20.6
4 (76th-99th Percentile)	22.5	24.1
LEP Excused	6.9	7.5

City-wide second-grade mathematics achievement scores are presented in Table 6. On average, pupils who were second graders in 1987, scored almost 3 NCE's higher, from 55 to nearly 58, than did second-graders in 1986. These results indicate that second

graders in the New York City public schools were, on average, outperforming a national sample on mathematics achievement. Examination of mathematics achievement by quartiles reveals that there was a substantial shift to the upper end of the distribution, with a considerable greater percentage of pupils scoring in the highest quartile.

TABLE 6

City-Wide Achievement for Second-Grade Pupils,  
Metropolitan Mathematics Test

1986		1987	
Mean NCE	Number Tested	Mean NCE	Number Tested
55.0	60747	57.7	59014

Quartile Analysis of Second-Grade Mathematics Achievement

Quartile	Percentage of Pupils Scoring in Quartile	
	1986	1987
1 (1st-25th Percentile)	22.1%	20.9%
2 (26th-50th Percentile)	18.6	16.7
3 (55th-75th Percentile)	22.0	17.7
4 (76th-99th Percentile)	31.2	37.6
LEP Excused	6.1	7.1

# APPENDIX A.1

## Second-Grade Class Size, 1985-86 and 1986-87

### All Classes

District	-----FY'86-----			-----FY'87-----		
	Reg.	# Class	Avg Class Size	Reg.	# Class	Avg Class Size
1	1124	47	23.91	1055	43	24.53
2	1616	64	25.25	1717	71	24.18
3	1025	41	25.00	988	39	25.33
4	1117	46	24.28	1133	44	25.75
5	1456	58	25.10	1381	59	23.40
6	2690	87	30.91	2777	93	29.86
7	1660	67	24.77	1621	69	23.49
8	1972	81	24.34	2155	84	25.65
9	3313	133	24.90	3449	136	25.36
10	4057	156	26.00	3870	154	25.12
11	2057	85	24.20	2246	91	24.68
12	1952	76	25.68	1880	69	27.24
13	1940	79	24.55	1985	79	25.12
14	2007	82	24.47	2028	85	23.85
15	2341	93	25.17	2367	98	24.15
16	1420	57	24.91	1512	60	25.20
17	3132	103	30.40	3083	106	29.08
18	1792	65	27.56	1694	64	26.46
19	2688	110	24.43	2748	110	24.98
20	2120	86	24.65	2189	90	24.32
21	1891	75	25.21	1845	76	24.27
22	2636	100	26.36	2663	109	24.43
23	1464	57	25.68	1558	63	24.73
24	2692	97	27.75	2814	103	27.32
25	2039	80	25.48	2010	81	24.81
26	1088	43	25.30	1274	50	25.48
27	2931	107	27.39	2945	114	25.83
28	2198	86	25.55	2150	90	23.88
29	2291	90	25.45	2426	94	25.80
30	2375	91	26.09	2564	98	26.16
31	3316	126	26.31	3279	137	23.93
32	1967	75	26.22	1853	72	25.73
Total	68367	2643	25.86	69259	2731	25.36

# APPENDIX A.2

## Second-Grade Class Size, 1985-86 and 1986-87

### Classes with One Teacher

District	-----FY'86-----			-----FY'87-----		
	Reg.	# Class	Avg Class Size	Reg.	# Class	Avg Class Size
1	1124	47	23.91	1055	43	24.53
2	1299	54	24.05	1600	67	23.88
3	876	36	24.33	927	37	25.05
4	1088	45	24.17	977	39	25.05
5	1456	58	25.10	1381	59	23.40
6	555	21	26.42	764	31	24.64
7	1628	66	24.66	1531	66	23.19
8	1942	80	24.27	2031	80	25.38
9	3313	133	24.90	3184	127	25.07
10	2904	118	24.61	3391	138	24.57
11	2027	84	24.13	2246	91	24.68
12	1695	68	24.92	1256	49	25.63
13	1817	75	24.22	1985	79	25.12
14	1798	75	23.97	1896	81	23.40
15	2034	83	24.50	2205	93	23.70
16	1301	53	24.54	1362	55	24.76
17	847	32	26.46	1135	45	25.22
18	1075	42	25.59	1325	52	25.48
19	2172	93	23.35	2349	97	24.21
20	1969	81	24.30	1918	81	23.67
21	1672	68	24.58	1727	72	23.98
22	2060	81	25.43	2390	100	23.90
23	1250	50	25.00	1409	58	24.29
24	1601	63	25.41	1840	73	25.20
25	1891	75	25.21	2010	81	24.81
26	1025	41	25.00	1215	48	25.31
27	1602	64	25.03	2187	90	24.30
28	1950	78	25.00	2021	86	23.50
29	2199	87	25.27	2297	90	25.52
30	2066	81	25.50	2015	80	25.18
31	2539	101	25.13	3247	136	23.87
32	1628	64	25.43	1666	66	25.24
Total	54403	2197	24.76	58542	2390	24.41

# APPENDIX A.3

## Second-Grade Class Size, 1985-86 and 1986-87

### Classes with a Paraprofessional

District	-----FY'86-----			-----FY'87-----		
	Reg.	# Class	Avg Class Size	Reg.	# Class	Avg Class Size
1	0	0	0	0	0	0.00
2	317	10	31.70	117	4	29.25
3	120	4	30.00	61	2	30.50
4	29	1	29.00	92	3	30.66
5	0	0	0.00	0	0	0.00
6	2135	66	32.34	1943	60	32.38
7	32	1	32.00	90	3	30.00
8	30	1	30.00	124	4	31.00
9	0	0	0.00	265	9	29.44
10	787	26	30.26	300	10	30.00
11	30	1	30.00	0	0	0.00
12	187	6	31.16	299	10	29.90
13	123	4	30.75	0	0	0.00
14	148	5	29.60	132	4	33.00
15	247	8	30.87	0	0	0.00
16	119	4	29.75	150	5	30.00
17	2285	71	32.18	1948	61	31.93
18	617	20	30.85	299	10	29.90
19	516	17	30.35	399	13	30.69
20	90	3	30.00	59	2	29.50
21	219	7	31.28	118	4	29.50
22	576	19	30.31	243	8	30.37
23	185	6	30.83	149	5	29.80
24	993	31	32.03	817	25	32.68
25	29	1	29.00	0	0	0.00
26	63	2	31.50	0	0	0.00
27	1174	38	30.89	758	24	31.58
28	116	4	29.00	66	2	33.00
29	92	3	30.66	129	4	32.25
30	248	8	31.00	518	17	30.47
31	709	23	30.82	32	1	32.00
32	339	11	30.81	187	6	31.16
Total	12555	401	31.30	9295	296	31.40



# APPENDIX A.4

## Second-Grade Class Size, 1985-86 and 1986-87

### Classes with Two Teachers

District	-----FY'86-----			-----FY'87-----		
	Reg.	# Class	Avg Class Size	Reg.	# Class	Avg Class Size
1	0	0	0.00	0	0	0.00
2	0	0	0.00	0	0	0.00
3	29	1	29.00	0	0	0.00
4	0	0	0.00	64	2	32.00
5	0	0	0.00	0	0	0.00
6	0	0	0.00	70	2	35.00
7	0	0	0.00	0	0	0.00
8	0	0	0.00	0	0	0.00
9	0	0	0.00	0	0	0.00
10	366	12	30.50	179	6	29.83
11	0	0	0.00	0	0	0.00
12	70	2	35.00	325	10	32.50
13	0	0	0.00	0	0	0.00
14	61	2	30.50	0	0	0.00
15	60	2	30.00	162	5	32.40
16	0	0	0.00	0	0	0.00
17	0	0	0.00	0	0	0.00
18	100	3	33.33	70	2	35.00
19	0	0	0.00	0	0	0.00
20	61	2	30.50	212	7	30.28
21	0	0	0.00	0	0	0.00
22	0	0	0.00	0	0	0.00
23	29	1	29.00	0	0	0.00
24	98	3	32.66	157	5	31.40
25	119	4	29.75	0	0	0.00
26	0	0	0.00	59	2	29.50
27	155	5	31.00	0	0	0.00
28	132	4	33.00	63	2	31.50
29	0	0	0.00	0	0	0.00
30	61	2	30.50	31	1	31.00
31	68	2	34.00	0	0	0.00
32	0	0	0.00	0	0	0.00
Total	1409	45	31.31	1392	44	31.63

# APPENDIX B

## Mean Reading and Mathematics Scores by Community School District

School District	Reading				Mathematics			
	1986		1987		1986		1987	
	Mean NCE	Number Tested	Mean NCE	Number Tested	Mean NCE	Number Tested	Mean NCE	Number Tested
1	39.9	1010	39.7	834	46.1	1011	45.8	864
2	54.0	1415	54.7	1524	62.5	1458	64.4	1506
3	40.3	1135	40.7	1068	48.2	1151	47.1	1093
4	43.9	1183	46.3	1207	51.6	1194	53.4	1230
5	39.9	1194	41.2	1154	47.6	1249	48.9	1135
6	38.0	1982	39.1	1905	48.3	2072	47.5	1914
7	38.7	1353	38.7	1198	44.9	1398	45.5	1309
8	45.6	1841	47.4	1934	53.4	1899	55.4	1950
9	39.7	2750	40.3	2889	49.1	2954	49.5	3000
10	42.2	3199	43.0	3100	51.3	3341	50.8	3118
11	51.8	1930	54.3	2090	60.3	1997	65.8	2079
12	41.2	1735	43.7	1590	50.9	1797	52.0	1656
13	46.2	1745	48.5	1709	56.8	1787	59.7	1695
14	45.9	1849	46.9	1820	55.2	1871	56.7	1834
15	49.0	2118	51.4	2028	57.2	2197	59.8	2030
16	41.2	1236	45.4	1173	51.5	1286	55.4	1142
17	45.9	2703	48.3	2592	50.5	2798	53.6	2589
18	56.2	1657	58.1	1521	61.9	1658	65.3	1523
19	42.2	2172	44.3	2204	49.1	2183	51.5	2169
20	53.9	1733	57.9	1770	59.6	1800	63.8	1754
21	50.2	1539	51.1	1591	59.1	1594	60.7	1589
22	57.5	2137	60.2	2180	62.5	2180	65.4	2189
23	41.7	1291	43.8	1227	50.1	1321	54.3	1334
24	51.1	2024	51.6	2129	58.5	2082	60.1	2147
25	57.3	1757	59.9	1736	65.3	1769	69.3	1773
26	63.4	1051	66.3	1277	70.8	1074	77.3	1189
27	49.3	2517	50.9	2599	54.5	2589	57.8	2567
28	50.1	1912	50.6	1827	56.2	1915	57.2	1872
29	51.3	2040	51.8	2143	57.7	2082	61.7	2141
30	51.6	1981	54.8	2070	56.0	2186	62.3	2066
31	59.4	3000	62.7	3064	64.2	3145	67.1	3036
32	37.8	1657	41.3	1515	44.8	1709	52.7	1526